4

568
1557
D.

Index to Volume XLV

JULY TO DECEMBER

1920

Electrical West.
Journal of Electricity
Published by The Technical Publishing Company
San Francisco, California

TK1
.E495

Authors' Index

	Page
Anderson, F. A.	*510
Anderton, J. H.	*508, 572
Angus, Howard	126, 218, 273, 332, 382
Arnold, Major H. H.	364
Barre, H. A.	566
Batcheller, Willis T.	*20
Beckett, B. B.	*375
Beeuwkes, Reinier	117
Bliss, H. H.	*78, *119, *183, *224, *277, *336, *380, *429, *482, *529, *574
Booth, Carl H.	513
Bowers, N. A.	*325
Bretherton, Jr., Sidney	*172
Buswell, J. M.	*174, *257
Butler, H. G.	558
Calkins, R. B.	*121
Champ, Gerald F.	187
Cone, D. I.	10
Cook, H. L.	*515
Corbet, Darrah	10
Damon, George A.	15
Delany, C. H.	*17, 378, *565
Dichman, Ernest W.	360
Dolman, M. T.	279
Doolittle, H. L.	*81, *130, *182
Eardley, E. H.	*128
Eltringham, R. L.	65
Etshokin, Louis	423
Evans, W. H.	*132
Fairfax, Virginia	330, 426, 484, *531, 584
Fisken, John B.	*307
Folsom, D. M.	523
Foote, E. E.	*12
Frickey, R. E.	*512
Geiger, C. W.	*432
Goddard, R. W.	129
Gutterson, Henry H.	162
Halverson, Lieut. H. A.	370
Haynes, Walter	*137
Henline, Henry H.	*9
Heston, W. C.	*522
Hillis, C. C.	579
Hodson, Frank	146
Hopkins, H. C.	*160
Humphrey, A. G.	*61
Jackson, Carl D.	36
Jordan, A. L.	171, 320
Keeney, Robert M.	571
Kemp, A. N.	473
Kent, L. C.	*57
Leavitt, W. M.	321
Llewellyn, Clarence	*68
Luckiesh, M.	*421
MacMullen, T. D.	424
Magnusson, C. Edward	*519
Mahon, Ross L.	*479
Mateer, Ross B.	196
Moore, L. J.	517
Morris, John M.	475
Mueller, Louis H.	368
Myers, George L.	310
Newbert, Lee H.	*577
Nicholas, F. R.	*31
Noetzli, F. A.	*79
Palmer, Andrew H.	*25
Parmelee, C. A.	*415
Peaslee, W. D. A.	115
Peek, F. W., Jr.	*7
Poole, C. O.	*476
Redington, Paul G.	*366
Rosborough, W. M.	*63
Ryan, Harris J.	*9, 560
Shuck, G. R.	180, 226, 283, 334, 431
Sibley, Robert	17, *328, 378
Simpson, T. W.	28
Smith, Glen H.	*282
Smith, R. E.	*70, 228
Smith, W. C.	*434
Tallant, Chas. H.	275
Taplin, R. G.	*61
Tucker, Gertrude O.	228
Uhden, C. F.	*567
Van Norden, Rudolph	*465, *525
Viele, F. S.	*71
Voyer, L. E.	*414
Warren, Irene	*33
Weber, F. D.	*83
Wishon, A. Emory	471
Wishon, A. G.	*267, *322
Wollaber, A. B.	23

Index to Volume XLV

Illustrated articles are designated by an asterisk (*), editorials by a dagger (†)

Page

A

†Accident Law, The New ... 55
Accidents, Analysis of ... 27
Accounting Section Report to N. W. Convention ... 317
†Accounting Systems ... 105
Ad Club of Los Angeles ... 192
†Advantages of the Electric Furnace ... 504
Advertising ... 74
*Advertising—by Howard Angus ... 126, 185, 219, 273, 333, 382
†Advertising, The Boomerang of Fear ... 304
†Advertising Sanity ... 507
*Advertising the Electrical Home—by H. C. Hopkins ... 160
*Advertising, The Use of Seasonal ... 272
Advice in Power Company, Engineering ... 4
*Agricultural Load, Building the ... 458
†Agricultural Load, Building the ... 454
†*Agricultural Loads in the West, One of the ... 455
†Agricultural Uses of Electricity, Vast Growth in ... 456
Agriculturalist and the Electrical Industry, Cooperation Between the—by Ross B. Mateer ... 196
*A. I. E. E. Convention at Portland ... 114
*A. I. E. E., Pacific Coast Convention ... 7
Air Draft Required for Fuel Oil—by Robert Sibley and C. H. Delany ... 378
**Aircraft in the West, Commercial Possibilities of—by Major H. H. Arnold ... 365
*Airplane a Coming Factor in the Power Industry of the West, The — Frontispiece ... 202
*Airplane Costs in Hydroelectric Work—by Ernest W. Dichman ... 360
*Airplane, Delivering by ... 193
†*Airplane for Lumber Company Use ... 504
*Airplane in Modern Hydroelectric Practice—by R. C. Starr ... 357
†Airplane in Mountain Construction, The ... 205
†Airplane in Water Power Development ... 353
*Airplane, Interior of Handley-Page Passenger ... 395
Airplane Service, Cost of Operation for—by Louis H. Mueller ... 368
*Airplane Simplifies Hydroelectric Exploration ... 386
*Airplane View of Capitol ... 392
*Airplanes and Forest Fires—by Paul G. Redington ... 366
*Airplanes, Commercial Possibilities of—by Major H. H. Arnold ... 364
Alaska Power Possibilities ... 438
†*Alaska, Wood Pulp Possibilities in Southeastern Alaska ... 454
†Alternate Leadership ... 4
Alternating Current Measurements, Bridge Methods for—by D. I. Cone ... 10
*Alternating Current, Mechanical Analogs in—by G. R. Shuck ... 180, 226, 283, 334, 431
American Association of Engineers:
- California Chapter ... 141
- Fresno Chapter ... 594
- San Francisco Chapter ... 192, 193, 595

American Institute of Architects ... 90
American Institute of Electrical Engineers:
- Annual Convention ... 443
- Denver Section ... 543, 594
- Los Angeles Section ... 492, 593
- Meetings ... 595
- New Western Members ... 445
- Oregon Chapter ... 544
- Portland Section ... 89, 390, 543, 593
- San Francisco Section ... 90, 143, 292, 544
- Seattle Section ... 292, 391, 492
- Utah Section ... 241, 444, 543

†American Institute of Electrical Engineers, The Next Convention of the ... 456
American Society of Mechanical Engineers ... 343, 444, 491, 546
*Amusement Parks, Electricity in ... 179
*Anaconda Smelter. Frontispiece ... 252
*Analogs in Alternating Currents, Mechanical—by G. R. Shuck ... 180, 226, 283, 334, 431
†Analysis of Public Utility Complaints ... 554
†Announcement, Publishers ... 103
*Apartment House, Electricity in a Modern Hotel ... 177
Apparatus, Electrical ... 314
Apparatus Industry, Canada's Electrical ... 80
Appliance Business, Principles of a Profit-making—by T. W. Simpson ... 28
†Applications for Water Rights by Los Angeles. Something to Think About ... 153
Applications for Western Water Power Permits ... 294
†Appointment of Utility Commissioners ... 403
*Arc Welding, Electric—by F. A. Anderson ... 510
*Arc Welding, General Notes on—by R. E. Frickey ... 512
*Arc Welding Outfit for Tapping Water Mains ... 528
Arc Welding Practice—by J. H. Anderton ... 572
*Arc Welding, Recent Development in Machines for Electric ... 561
†Are We Downhearted? ... 556
Architect's Viewpoint, The—by Henry H. Gutterson ... 162
†Arizona and New Mexico, Economies in ... 304
*Art in the Electrical Store ... 582
†A. S. M. E., Boiler Code of the ... 305
†*Asset of Community Interest, The ... 404
*At Home in the Electrical Home ... 164
*Atascadero—by Sidney Bretherton, Jr ... 172
*Automatic Substation, Sacramento Northern Railroad—by W. H. Evans ... 132
†Automatic Substations ... 53
Aviation, The Rise of Civil—by Lieut. H. A. Halverson ... 370

B

*Back Up Your Local Power Company Financially ... 236
Balance Sheet of Western Power Companies ... 235
Basic Industry, The—by A. Emory Wishon ... 471
†Battleships, The Triumphant Electric Drive On ... 306
*Believing, Seeing Is—by L. C. Kent ... 57
*Big Creek Project Visited by Newspaper Men ... 439
†Big Idea, The ... 506
Bell, Water Power ... 91
†Boiler Code of the A. S. M. E. ... 305
†Boiler, How Safe Is a Used Lap-Seam? ... 305
†Boilers, The Cleaning of ... 4
†Bond Sale, Great Western Power Company's ... 254
†Bonds in California, The Selling of 8% ... 206
Books and Bulletins ... 47, 97, 147, 197, 247, 297, 348, 397, 447, 547, 597
†Boomerang of Fear Advertising, The ... 304
*Brass Furnaces, Transformer for ... 565
*Brass Making in the Northwest, Electricity for—by W. C. Heston ... 522
Brass Melting Costs ... 591
Bridge Methods for Alternating Current Measurements—by D. I. Cone ... 10
British Columbia Electrical Cooperative Association ... 192, 390
†Broad Field for N. E. L. A. Activities ... 206
Builders of the West:
- LXXX—Quinan, G. E. ... 40
- LXXXI—Ross, J. D. ... 89
- LXXXII—Scherer, J. B. ... 141
- LXXXIII—McGroarty, J. S. ... 191
- LXXXIV—Kerckhoff, W. G. ... 240
- LXXXV—Laist, Frederick ... 291
- LXXXVI—Huntington, D. L. ... 341
- LXXXVII—Starr, R. C. ... 390
- LXXXVIII—Weill, Raphael ... 443
- LXXXIX—Mead, Elwood ... 492
- XC—Keeney, Robert M. ... 543
- XCI—Davis, Arthur P. ... 593

†Building Activity as an Electrical Opportunity ... 155
†Building the Agricultural Load ... 454
*Building the Agricultural Load ... 458
*Building the Industrial West ... 260
†Burden of Margins, The ... 455
†Business Conditions, Outlook for ... 156
*Business Involved in Electrical Development—Frontispiece ... 452
Business Library, Pamphlets and Clippings in a—by Virginia Fairfax ... 330, 426, 484, *531, 584
Business Management and Organization, Course in ... 534
Business Outlook, What Is the? ... 226
Business, Potential Kilowatts and—by John M. Morris ... 475
†Business, The Christmas Spirit in ... 404

C

California Association of Electrical Contractors and Dealers ... 74, *144, 192, 241, 292, 492
California Electrical Cooperative Campaign ... 141, 241, 443, 543
*California Electrical Cooperative Campaign's Work in 1920—by Lee H. Newbert ... 577
†California's Great Irrigation Project ... 453
†California, Industrial Development in ... 205
California Industries Association ... 495, 543, 595
California—1920, The Power Situation in —by H. G. Butler ... 558
California-Oregon Power Company, Reorganization of ... 43
*California Precipitation — by Andrew H. Palmer ... 25
California Public Utilities ... 541
*California, The Industrial Load in ... 231
†California, The Selling of 8% Bonds in ... 206
†California's Combination Code ... 153
†Call for the Principals, A ... 303
*Campaign, How to Put on an Electrical Home ... 157
*Camping on the Mackenzie ... 545
Canada's Electrical Apparatus Industry ... 80
*Caribou Project ... 270
*Caribou Tunnel Completed ... 589
*Cedar Falls Pipe Line, New Features of the—by F. R. Nicholas ... 31
Cedar Falls Power House, Plans for ... 345
Cedar Falls Tunnel Construction ... 195
*Central Fire Alarm Station, A—by C. W. Geiger ... 432
Central Station and Christmas Service, The ... 412
Central Station Load, The Electric Furnace as a—by Robert M. Keeney ... 571
*Central Station Opportunity, A—by R. W. Goddard ... 129
Central Stations in the West in 1920, Growth of ... 394
Chamber of Commerce, New International ... 245
†Changing Values ... 106
†Chemical Production, Freight Increase Affects ... 507
Chicago, Milwaukee & St. Paul R. R., Electric Power Consumption—by Reinier Beeuwkes ... 117
*Children's Christmas Electrical, The ... 408
†Chimney Gases, Watching the ... 6
China, Electrical Plants in ... 243
*Christmas in the Company ... 425
†Christmas Opportunity, Electrical Toys, A ... 404
*Christmas Over There ... 419
Christmas Service, The Central Station and ... 412
†Christmas Spirit in Business, The ... 404
*Christmas Tree for Army of Occupation ... 419
*Christmas Windows ... 411
†Cleaning of Boilers, The ... 4
†Code, California's Combination ... 153
Colorado Electric Light, Power and Railway Association ... 342
Colorado Electric Light, Railway & Power Association ... 390
*Colorado River Development — Frontispiece ... 352
†Combination Code, California's ... 153
Commercial Club, Salt Lake City ... 141
*Commercial Possibilities of Aircraft in the West—by Major H. H. Arnold ... 364
Commercial Section Report to N. W. Convention ... 318
†Commission Regulation, Constructive ... 5
†Commission, Selling the Regulating ... 356
†Commissioners, Appointment of Utility ... 403
*Common Sense Hydroelectric Plant—by Ross L. Mahon ... 479
Company, The Man in the—by A. B. Wollaber ... 23
Competition in the Public Utility Industry—by George L. Myers ... 310
†Competition With the 5-10-15c Store ... 407
†Complaints, Analysis of Public Utility ... 554
†Confidence, The Need of ... 503
*Construction in the West, Past and Future ... 562
†Construction in the West, Record ... 406
*Construction on Western Hydroelectric Projects ... 212
Contest, Electric Clothes Washer—by Gerald F. Champ ... 187
†Contractor and the Electrical Home, The ... 154
*Contractor-Dealer and His Future—by C. A. Parmelee ... 415
Contractor-Dealer Association, Electrical:
- California ... 74, *144, 192, 241, 292, 492
- Montana ... 292
- National Convention ... 341
- Oregon ... 40, 90, 191, 390, 493, 594, 595
- Salt Lake City ... *142
- San Francisco ... 45, 241
- Tacoma ... 495
- Washington ... 495

*Contractor-Dealer, Electrical Toys for the ... 408
Contractor-Dealer, Wireless Apparatus for the—by Louis Etshokin ... 423
*Contractor-Dealers, Convention of California ... 74
*Contractor-Dealers of the Northwest ... 217
†Contractor, Industrial Lighting and the ... 55
†Contractor's Problem, A Solution of the ... 54
Cooking by Electricity ... 181

Page

*Construction Camps, Recreational Work in—by Richard E. Smith... 228
†Construction in Washington, Electric... 455
*Construction of the Gibraltar Dam, The—by N. A. Bowers... 325
*Construction on the Caribou Project... 271
†Construction, The Airplane in Mountain... 205
†Constructive Action on the Labor Problem... 255
*Convenience, A Woman's—by A Woman... 166
†Convenience Outlet Campaign, The... 507
*Convention at Portland, A. I. E. E.... 114
†Convention, Electrical Engineers'... 154
*Convention of California Contractor-Dealers... 74
*Convention of Pacific Coast A. I. E. E.... 7
†Convention of the A. I. E. E., The Next Convention, Report of Technical Section to N. W.... 456
*Convention, The Spokane 211, 314
*Cooking School, Electric ... 285
†Cooperating With the Manufacturer... 230
*Cooperation, A Year's Work for—by Lee H. Newbert... 557
Cooperation Between the Agriculturalist and the Electrical Industry—by Ross B. Mateer... 577
Cooperation Figures, A Page of... 196
†Cooperation in Education ... 581
*Cooperation in Salt Lake City, Electrical—by E. H. Eardley ... 104
†Cooperation in the Northwest; A Step in the Right Direction ... 128
†Cooperation on Wiring Specifications... 104
†Cooperation, Public Scepticism Towards... 304
*Cooperation, The Great Northwest Visualizes a New Adventure in. Frontispiece ... 554
Cooperative Campaign, California Electrical....141, 241, 443, 543
†Cooperative Campaign Idea Spreads... 302
Cooperative Campaign in the Northwest....141, 493, 594
Cooperative Electrical Association of British Columbia 192, 390
†Cooperative Idea in the Northwest... 205
*Cooperative Idea, The Spread of the... 215
*Cooperative League, Rocky Mountain... 543
*Copper Production, National ... 94
Cost of Money ... 229
Cost of Operation for Airplane Service—by Louis H. Mueller... 368
*Crane, Large Capacity Navy Yard... 265
*Cranes, Electric Hammerhead... 269
Current Measurements, Bridge Methods for Alternating—by D. I. Cone... 10
†Customer Ownership of Securities... 554
Customers' Comments ... 410

D

*Dam, Construction of the Gibraltar... 325
*Dam, The Reinforced Concrete Arch—by F. A. Noetzli ... 79
*Dealer and His Future, The Electric Appliance—by C. A. Parmelee... 415
*Dealer's Window By Night, The... 69
*Del Monte Meeting of Electrical Supply Jobbers' Association ... 494
†Demand for Better Technical Training... 103
*Demonstration Kitchen, A... 481
*Demonstrations of Good Lighting. Seeing Is Believing—by L. C. Kent... 57
Denver Section A. I. E. E....543, 594
"Depreciation," Finding a Substitute for... 405
*Desire Store, The—by H. B. Rogers... 420
†Development of the West, Publicity and the ... 254
*Difficulties in Hydroelectric Exploration Simplified by the Use of the Airplane.... 386
*Distribution, A New Plan of—by Glen H. Smith ... 282
†Distribution of Rewards ... 155
†Distribution Systems, Range ... 406
Dollar Starts Rolling in, Putting Kilowatts Upon the Line, When the—Frontispiece ... 452
Downtown Association ... 342
†Draft Required in Fuel Oil Practice... 354
Dredge for New Zealand Fields, An American Go'd ... 379
*Dredge Is Being Electrically Welded, Clam Shell ... 540
*Dredge, The Starting of a Gold... 383

E

*Early Records in Western Power Development; Plans for the Electrical Future ... 562
†Economies in Arizona and New Mexico.... 304
†Economies in Joint Operation... 106
*Edison Company Outing ... 145
Editorials....3, 53, 103, 153, 203, 253, 303, 353, 403, 453, 503, 553
†Educated, 200,000 Electrically... 153
†Educating the Manufacturer... 105
*Educating Women for the Electrical Home—by Millicent L. Sears... 170
†Education and the Electrical Home... 155
†Education, Cooperation in ... 104
Education of an Engineer, The—by R. W. Sorensen ... 112
Egg Production and Electric Lights... 161
*Electric Appliance Dealer and His Future, The—by C. A. Parmelee... 415
*Electric Arc Welding—by F. A. Anderson ... 510
*Electric Arc Welding, Recent Development in Machines for... 561
†Electric Construction in Washington... 455
*Electric Cooking School ... 230
†Electric Drive on Battleships, The Triumphant ... 306
Electric Furnace as a Central Station Load—by Robert M. Keeney... 571
Electric Furnace, Refractories in the—by Carl H. Booth... 513
Electric Heating—by T. D. MacMullen.... 424
†*Electric Light Rates and the High Cost of Living ... 456
*Electric Operation for Fresno Raisin Packing Plant ... 469
Electric Power Consumption, C. M. & St. P. Railway—by Reinier Beeuwkes... 117
*Electric Power for Mining—by F. S. Viele ... 71
†*Electric Propulsion for Merchant Vessels 405
†Electric Pumping Survey in Montana... 255
†Electric Railway Commission, Report of.. 304
*Electric Sign Manufacture—by R. E. Smith ... 70
†Electric Storage Batteries in Driving Tunnels ... 256
†Electric Utility Financing Should Be Supported ... 203
†Electric Vehicle, The Return of the... 55
*Electric Welding Practice—by J. H. Anderton ... 508
†Electric Welding, Rise of... 505
†Electric Welding, Western Leadership in.. 355
†Electric West, The ... 56
*Electrical Cooperation in Salt Lake City—by E. H. Eardley ... 128
Electrical Development League, San Francisco ... 17
†Electrical Engineers' Convention... 154
†Electrical Home, Advertising the—by H. C. Hopkins ... 160
*Electrical Home, At Home in the... 164
*Electrical Home Campaign, How to Put on an ... 157
*Electrical Home Campaign, Progress of the ... 327
*Electrical Home Display, Permanent... 169
*Electrical Home, Educating Women for the—by Millicent L. Sears... 170
†Electrical Home, Education and the... 154
*Electrical Home, In Wiring the... 168
*Electrical Home Is Wired, How the... 163
*Electrical Home, Los Angeles... 589
†Electrical Home, The Contractor and the.. 154
*Electrical Home, The—Frontispiece... 152
*Electrical Industry, The Outlook for the—by John B. Fisken... 307
†Electrical Opportunity, Building Activity as an ... 155
*Electrical Progress in a Model Colony—by Sidney Bretherton, Jr.... 172
Electrical Retail Dealers' Association of San Francisco ... 342
Electrical Retailers' Association of San Francisco ... 444
†*Electrical Show, Montana Holds First... 505
†Electrical Toys—a Christmas Opportunity ... 404
†Electrically Educated, 200,000... 153
*Electrically Manufactured Food Product, An ... 263
*Electricity for Brass Making in the Northwest—by W. C. Heston... 522
*Electricity in a Modern Hotel Apartment House ... 177
*Electricity on the Farm... 462
*Electricity, Problem Course in—by H. H. Bliss 78, 119, 183, 224, 277, 336, 380, 429, 482, 529, 574
Electrification of Railroads in Japan... 384
Electrification of the Stockholm-Goteborg Line ... 66
†Electrification, Standardization in Railway ... 5
*Electrifying the West's Most Important Industry ... 462
*Emergency Steam Plant for Rice Irrigation, An—by Rudolph Van Norden.... 464, 525
Engineer in the Making, The... 110
Engineer, The Education of an—by R. W. Sorensen ... 112
*Engineer, The Western ... 14
†Engineering Advice in Power Company.... 4
*Engineering, A New School of—by Walter Haynes ... 137
†Engineering Leadership in the West, Keeping ... 353
†Engineering Profession, National Society of ... 54
Engineering Societies of San Francisco, Joint Council of ... 16
Engineering Societies, Russian and American ... 194
†Engineering Societies, The Federated... 305
Engineering Society of Utah ... 390
Engineers, Affiliation of Spokane... 14
Engineers' Club of San Francisco.....291, 292
Engineers, Conference of ... 42
†Engineers' Convention, Electrical ... 154
Engineers of Yesterday—by A. L. Jordan:
20. Murdock ... 171
21. Prony ... 320
†Engineers, Publicity for ... 105
†Eternal Question of Private Versus Public Ownership ... 253
*Example of the New Vision of the West, An. Frontispiece ... 402
*Exhibit at Tulare Fair, Electrical... 539

F

†Factors Involved in Rapid Growth... 555
Factory, Lighting the ... 125
*Farm Motor Installation ... 461
Farm, Motors for the ... 478
Farm Power Required ... 478
*Farm, The Woman on the... 467
*Farm Uses of Electricity... 462
*Federal Power Commission Organization.. 377
†Federated Engineering Societies, The... 305
†Fear Advertising, The Boomerang of... 304
*Features of Steam Power Plant Practice in the West ... 222
*Featuring Suds ... 274
Federated American Engineering Societies 144, 545
*Filing and Indexing of Office Records—by Irene Warren ... 33
Filing Pamphlets and Clippings in the Business Library—by Virginia Fairfax 330, 426, *531, 484, 584
†Financial Status of Western Power Companies ... 207
*Financially, Back Up Your Local Power Company ... 236
†Financiers in N. E. L. A., Interest of... 5
*Financing Public Utilities... 208
Financing Public Utilities in the West—by A. N. Kemp... 473
†Financing Should Be Supported, Electric Utility ... 203
†Finding a Substitute for "Depreciation".... 405
*Fire Alarm Station, A Central—by C. W Geiger ... 492
†Five-Ten-Fifteen Cent Store, Competition With the ... 407
†"Fixed Charges" in Water Power Rates... 555
*Food Product, Electrically Manufactured 263
*Foot-Candle Meter and Its Part in Better Lighting—by W. M. Rosborough... 93
*Forest Fires, Airplanes and—by Paul G. Redington ... 366
*Forestalling Another Power Shortage... 212
†Forwarding Better Lighting ... 54
†Freight Increase Affects Chemical Production ... 507
†Freight Rates, The Increase in... 155
*Frontispiece 2, 52, 102, 152, 202, 252, 302, 352, 402, 452, 502, 552
Fuel Conservation and Water Power... 233
Fuel Hogged ... 116
*Fuel, Hogged. Frontispiece... 2
Fuel Oil, Air Draft Required For—by Robert Sibley and C. H. Delany... 378
*Fuel Oil Heaters and Other Accessories—by Robert Sibley and C. H. Delany... 17
†Fuel Oil Practice, Draft Required in... 354
Fuel Oil Situation on the Pacific Coast, The—by D. M. Folsom... 523
*Fuel, The Insistent Demand for New. Frontispiece ... 2
†Fuel, The Insistent Search for New... 255
†Fuels Gave Out, What If Mineral?... 354
*Fuels of the Pacific Coast—by C. H. Delany ... 565
Fuels, Sawmill Refuse, Powdered Coal and Oil—by Darrah Corbet... 10
†Furnace, Advantages of the Electric... 504
Furnace as a Central Station Load—by Robert M. Keeney... 571
*Furnace, Electric. Frontispiece... 502
Furnace Load, Electric ... 146
Furnace, Refractories in the Electric—by Carl H. Booth... 513
*Furnaces, Transformer for Brass... 565

G

*Garden Illumination ... 67
†Gases, Watching the Chimney... 6
General Lighting Safety Orders, Practical Application of—by R. L. Eltringham.... 65
*General Notes on Arc Welding—by R. E. Frickey ... 512
†Giant Industries Enter the West... 206
*Gibraltar Dam, The Construction of the—by N. A. Bowers... 325
*Goat Island as a Community Center for San Francisco Bay District. Frontispiece ... 402
*Gold Dredge, The Starting of a... 383
*Granby Mine, Hydraulic Equipment of—by Chas. H. Tallant... 275

Page

*Great Basin of the Colorado, The. Frontispiece ... 352
*Great Northwest Visualizes a New Adventure in Cooperation, The. Frontispiece ... 302
†Great Western Power Company's Bond Sale ... 254
*Great Western Power Company's Caribou Construction ... 270
*Growing Factor in Western Industrial Development. Frontispiece ... 502
†Growth, Factors Involved in Rapid ... 555

H

Happenings in the Industry ... 43, 91, 144, 194, 242, 293, 344, 392, 438, 489, 538, 589
*Heaters and Other Accessories, Fuel Oil —by Robert Sibley and C. H. Delany ... 17
Heating, Electric—by T. D. MacMullen ... 424
†Heating in the Home, Heavy ... 457
†Heavy Heating in the Home ... 457
Hetch Hetchy Contract Declared Legal ... 45
High Voltage Research Equipment—by Harris J. Ryan ... 560
*High Voltage Research Laboratory at Stanford University. Frontispiece ... 552
†Higher Pressures in Steam Electric Generation ... 557
Hogged Fuel ... 116
*Hogged Fuel. Frontispiece ... 2
*Home, Advertising the Electrical—by H. C. Hopkins ... 160
*Home, At Home in the Electrical ... 164
*Home Campaign, How to Put on an Electrical ... 157
*Home Campaign, Progress of the Electrical ... 327
*Home Display, Permanent Electrical ... 169
†Home, Education and the Electrical ... 154
*Home, Educating Women for the Electrical—by Millicent L. Sears ... 170
†Home, Heavy Heating in the ... 457
*Home, In Wiring the Electrical ... 168
*Home is Wired, How the Electrical ... 163
†Home, Lighting the ... 54
*Home, Los Angeles Electrical ... 589
†Home, The Contractor and the Electrical ... 154
*Home, The Electrical. Frontispiece ... 152
How Safe Is a Used Lap-Seam Boiler? ... 305
How the Electrical Home Is Wired ... 163
How to Get New Industries ... 506
How to Put on an Electrical Home Campaign ... 157
Hunting Troubles in the Mine ... 355
Hydraulic Equipment of Granby Mine—by Chas. H. Tallant ... 275
*Hydroelectric Exploration Simplified by Use of Airplane ... 386
*Hydroelectric Plant, A Common Sense—by Ross L. Mahon ... 479
*Hydroelectric Practice, The Airplane in Modern—by R. C. Starr ... 357
*Hydroelectric Work, Airplane Costs in—by Ernest W. Dichman ... 360

I

Ice Cream Electrically, Making—by J. M. Buswell ... 174
*Ice Making in the San Joaquin Valley by J. M. Buswell ... 257
*Idaho by Water Power, Developing ... 22
Illuminating Engineering Society:
Bay Cities Chapter ... 90, 291, 343, 591
Fourteenth Annual Convention ... 343
New Officers ... 141
†Illuminating Engineering Society, S. F.—Forwarding Better Lighting ... 54
†Illumination and the Contractor, Industrial ... 55
*Illumination at Shriners' Convention ... 244
Illumination by Direct Lighting ... 284
*Illumination, Demonstrations of Proper. Seeing Is Believing—by L. C. Kent ... 57
Illumination Exhibit, San Francisco ... 540
*Illumination, Garden ... 67
*Illumination in a Stock Show Building—by F. D. Weber ... 83
†Illumination in the Home ... 54
*Illumination, Increasing Production Through Good ... 417
†Illumination, Industrial ... 404
*Illumination, Industrial—by J. J. McLaughlin ... 418
*Illumination, Novelties in Home—by M. Luckiesh ... 421
*Illumination of Dealers' Windows ... 69
*Illumination of Industrial Yards—by A. G. Humphrey and R. G. Taplin ... 61
*Illumination of Tennis Courts—by L. E. Voyer ... 414
Illumination of the Factory ... 125
Illumination, Ornamental Street ... 232
*Illumination, Outdoor Industrial—Frontispiece ... 52
†Illumination Outdoors ... 55
*Illumination, The Foot-Candle Meter and Its Part in Better—by W. M. Rosborough ... 63

Page

*†Illumination to the Factory Owner, Carrying Industrial ... 406
Illumination, Value of Proper ... 75
†Increase in Freight Rates, The ... 155
†Increase in Population in the West, The ... 354
*Increasing Production Through Good Lighting ... 417
†Inductive Interference ... 53
Inductive Interference (Committee Report) ... 315
†Industrial Development in California ... 205
*Industrial Development, The Electric Furnace as a Factor in Western ... 502
*Industrial Illumination ... 417
*Industrial Illumination—by J. J. McLaughlin ... 418
*Industrial Illumination, Outdoor—Frontispiece ... 52
†Industrial Lighting and the Contractor ... 55
Industrial Lighting Exhibit Opens ... 540
†Industrial Lighting Field, Possibilities in the ... 404
†*Industrial Lighting to the Factory Owner, Carrying ... 406
*Industrial Load in California, The ... 231
*Industrial West, Building the ... 260
Industrial Uses of Radio ... 279
*Industrial Yard Lighting—by A. G. Humphrey and R. G. Taplin ... 61
†Industries Enter the West, Giant ... 206
†Industries for the West, Optimism Over New ... 254
†Industries, How to Get New ... 506
†Industry, Research and ... 104
Industry, The Basic—by A. Emory Wishon ... 471
*Industry, The West Leads in the Smelting—Frontispiece ... 252
†Insistent Search for New Fuel, The ... 255
†Insulator Development, Progress in ... 3
*Insulator, Electrical Characteristics of the Suspension—by F. W. Peek, Jr. ... 7
*Insulator Strings, Unit Voltage Duties in Long Suspension—by Harris J. Ryan and Henry H. Henline ... 9
Insulators, Factors Controlling the Design and Selection of—by W. D. A. Penslee ... 114
†Interconnection, A New Record in ... 306
*Interesting Additions to the Longest Transmission System—by C. O. Poole ... 476
†Interference, Inductive ... 53
*Intermountain District, Electric Irrigation in the ... 485
Irrigation in Montana ... 473
*Irrigation in the Antelope Valley ... 590
*Irrigation in the Inter-Mountain District, Electric ... 485
†Irrigation Project, California's Great ... 453

J

Japan, Electrification of Railroads in ... 384
Jobbers' Association ... 240, 391, *494
†Jobbers' Association, Pacific Coast ... 454
*Jobbers' Camping Trip ... 545
Jobbers in 1920, Work of the—by C. C. Hillis ... 579
Joint Committee of Los Angeles, The—by George A. Damon ... 15
Joint Conference Committee ... 42, 545
Joint Council of Engineering Societies of San Francisco ... 16
†Joint Operation, Economies in ... 106
Joint Technical Societies of Los Angeles 391
†Joint Utility Campaign, A ... 504
*Jumping a 111-inch Spark Gap with 1,660,000 Volts—Frontispiece ... 552

K

†Keeping Engineering Leadership in the West ... 353
†Kerckhoff Power House, The Putting in of the ... 207
*Kerckhoff Power Project is Completed ... 242
*Kitchen, A Demonstration ... 481

L

†Labor Problem, Constructive Action on the ... 255
*Laboratory at Stanford University, High Voltage ... 552
Laboratory for High Voltage Research—by Harris J. Ryan ... 560
*Lamps, Selling Mazda—by Clarence Llewellyn ... 68
*Large Capacity Navy Yard Crane ... 265
*Latest in Everything Electrical ... 47, 96, 147, 197, 246, 348, 396, 446, 496, 547, 596
†Leadership, Alternate ... 4
†Let There Be a Little More Light ... 53
*Letters, The Arrangement of Business ... 35
Letters to the Editor ... 46, 146, 196
Library, Pamphlets and Clippings in a Business—by Virginia Fairfax ... 330, 426, 484, *531, 584
*Library, Periodical Slip, Business ... 335
†Light, Let There Be a Little More ... 53
†Lighting and the Contractor, Industrial 55

Page

*Lighting Demonstrations, Seeing is Believing—by L. C. Kent ... 57
Lighting Exhibit Opens, San Francisco 540
†Lighting Field, Possibilities in the Industrial ... 404
†Lighting, Forwarding Better ... 54
*Lighting, Industrial Yard—by A. G. Humphrey and R. G. Taplin ... 61
*Lighting, Novelties in—by M. Luckiesh 421
Lighting, Problems in Ornamental Street 232
Lighting System for Long Beach ... 145
Lighting the Factory ... 125
*Lighting, The Foot-Candle Meter and Its Part in Better—by W. M. Rosborough 63
†Lighting the Home ... 54
Logan River, Utah, Power Development 345
†Looking Back—and Ahead ... 553
*Los Angeles Electrical Home ... 589
Los Angeles Joint Technical Societies ... 391
Los Angeles Section, A. I. E. E. ... 492, 593
Los Angeles, The Joint Committee of—by George A. Damon ... 15
†Los Angeles Water Right Applications, Something to Think About ... 153
†*Lumber Company Use, Airplane for ... 504
*Lunch Service at Cost—by Gertrude O. Tucker ... 228

M

*Making Ice Cream Electrically—by J. M. Buswell ... 174
Making One Sale Into Two—by M. T. Dolman ... 279
Man in the Company, The—by A. B. Wollaber ... 23
*Manufacture, Electric Sign—by R. E. Smith ... 70
†Manufacturer, Cooperating with the ... 557
†Manufacturer, Educating the ... 105
*Manufacturing Fun ... 179
†Market, Selling a Buyer's ... 505
†Margins, The Burden of ... 455
Measurements, Bridge Methods for Alternating Current—by D. I. Cone ... 10
*Mechanical Analogs in Alternating Currents—by G. R. Shuck ... 180, 226, 283, 334, 431
Meeting Notices for Electrical Men ... 40, 89, 141, 191, 241, 291, 341, 390, 443, 492, 543, 593
*Meeting the Power Shortage in the West 280
*Meter and Its Part in Better Lighting, The Foot-Candle—by W. M. Rosborough 63
Meters ... 315
†Mine, Hunting Troubles in the ... 355
*Mine, Hydraulic Equipment of Granby—by Chas. H. Tallant ... 275
*Mining, Electric Power for—by F. S. Viele ... 71
*Mining, Trouble Shooting in Gold and Silver—by B. B. Beckett ... 375
Mistakes, Admitting ... 35
*Model Colony, Electrical Progress in a—by Sidney Bretherton ... 172
*Modern Telegraph Service—by R. B. Calkins ... 121
Money, Cost of ... 229
*Money in Electrical Development—Frontispiece ... 452
Montana Association of Electrical Contractors and Dealers ... 292
†Montana, Electric Pumping Survey in ... 255
†*Montana Holds First Electrical Show ... 505
Montana, Irrigation in ... 473
*More Power for Western Development ... 270
*More Power to the West—by Robert Sibley ... 328
Motion Picture for the Power Company, The ... 56
Motion Pictures in the Home ... 416
Motors for the Farm ... 478
*Murray Dam, Mosaic of ... 374

N

National Electric Light Association:
Executive Committee ... 193, 445, 593
Pacific Coast Section ... 341, 393, 444, 493, 495, 538
Portland Section ... 89, 390, 543, 593
Publicity Campaign ... 393, 538
Rocky Mountain Division ... 240, 342, 391
*National Electric Light Association Committee Activities, Pacific Coast ... 569
†National Parks, Water Power Sites in ... 355
†National Society of Engineering Profession ... 54
*Navy Yard Crane, Large Capacity ... 265
†Need of Confidence, The ... 503
†N. E. L. A. Activities, Broad Field for ... 206
†N. E. L. A., Interest of Financiers in ... 5
N. E. L. A. Water Power Committee Acting with Federal Committee ... 295
†New Accident Law, The ... 55
†New Advances in Telephony in the West 456
*New Aspect of Public Utility Service ... 228
New Electrical Developments, 48, 98, 148, 198, 248, 298, 349, 398, 448, 498, 548, 598
†New Fuel, The Insistent Search for ... 255

Page

†New Industries for the West, Optimism Over ... 254
*New Plan of Distribution, A—by Glen H. Smith ... 282
*New Portland Steam Plant—by E. E. Foote ... 12
†New Record in Interconnection, A ... 306
*New School of Engineering, A—by Walter Haynes ... 137
New Transmission Line Construction in 1920—by H. A. Barre ... 566
†*Newspaper Support in Water Power Development ... 506
*Newspapers Tell the Story. S. Cal. Edison ... 541
†Next Convention of the A. I. E. E., The ... 456
†*Nooksack Falls ... 404
†Northwest Association, The ... 303
*Northwest, Contractor-Dealers of the ... 217
Northwest Cooperative Campaign ... 141, 493, 594
†Northwest Cooperative Plan; A Step in the Right Direction ... 104
Northwest Electric Light and Power Association ... 211, 241, 285, 343, 495, 546
*Northwest Electric Light and Power Association Convention at Spokane ... 211
*Northwest Electric Light and Power Association; Convention Report ... 285
Northwest Electric Service League ... 141, 493, 594
*Northwest Electric Service League, Progress of the ... 474
*Northwest, Electricity for Brass Making in the—by W. C. Heston ... 522
†Northwest, The Cooperative Idea in the ... 205
*Northwest Transmission Lines—Frontispiece ... 302
*Northwestern Electric Company—Frontispiece ... 2
*Northwestern Electric Company's New Steam Plant—by E. E. Foote ... 12
*Northwestern Electrical Store, A New ... 591
*Novelties in Lighting—by M. Luckiesh ... 421

O

*Office Records—Their Filing and Indexing—by Irene Warren ... 33
†Offices, Selection of ... 3
*Oil Conservation, The—by W. C. Smith ... 434
Oil-Electric Propelled Yacht ... 266
Oil Fuels, Saw Mill Refuse, Powdered Coal and—by Darrah Corbet ... 10
†Oils, Research Work Needed on Transformer ... 255
Oil Situation on the Pacific Coast, The Fuel—by D. M. Folsom ... 523
*Olive Plant, Electrically Operated ... 539
†*One of the Largest Agricultural Loads in the West ... 455
*Opportunity, A Central Station—by R. W. Goddard ... 129
†Optimism Over New Industries for the West ... 254
Orders, Practical Application of General Lighting Safety—by R. L. Eltringham ... 65
Oregon Association of Electrical Contractor-Dealers ... 40, 90, 191, 390, 493, 594, 595
Oregon Chapter, A. I. E. E. ... 544
Oregon Technical Council ... 15
*Outdoor Industrial Illumination—Frontispiece ... 52
*Outdoor Substation, A Tie-in ... 73
†Outdoors, Illumination ... 55
†Outlook for Business Conditions ... 156
*Outlook for the Electrical Industry, The—by John B. Fisken ... 307
Overhead Systems ... 316
†Ownership of Public Utilities, Private versus Public ... 253

P

*Pacific Coast, Fuels of the—by C. H. Delany ... 564
†Pacific Coast Jobbers' Association ... 454
*Pacific Coast N. E. L. A. Committee Activities ... 569
*Pacific Coast Radio Show Exhibit ... 591
Pacific Coast Section, N. E. L. A. ... 341, 393, 444, 493, 495, 538
Pacific Division, Electrical Supply Jobbers' Association ... 241, 391, *494
Pacific Gas & Electric Company Reorganization ... 489
Pacific Gas & Electric Company to Build High Head Plant ... 145
Pacific Service Employes' Association, *41, 444
*Packing Plant, Electric Operation for Fresno Raisin ... 469
Page of Cooperation Figures, A ... 581
Pamphlets and Clippings in a Business Library—by Virginia Fairfax ... 330, 426, 484, *531, 584
Personals ... 38, 87, 139, 189, 238, 289, 339, 388, 436, 487, 537, 587
*Pioneer Electric Company's Store ... 591
*Pipe Line, New Features of the Cedar Falls—by F. R. Nicholas ... 31
Pit River Project Construction Under Way ... 296

Page

*Plant, A Common Sense Hydroelectric—by Ross L. Mahon ... 479
*Pole Preservation—by W. M. Leavitt ... 321
Poles, Treating ... 109
†*Population, Center of ... 556
†Population Figures for the West ... 403
†Population in the West, The Increase in ... 354
*Portland Convention of A. I. E. E. ... 114
*Portland is Host to Shriners ... 244
*Portland Railway Light & Power Company, Opening of Salem Office ... 120
Portland Section, A. I. E. E., 89, 390, 543, 593
Portland Section N. E. L. A., 89, 390, 543, 593
*Portland Steam Plant, New—by E. E. Foote ... 12
†Possibilities in the Industrial Lighting Field ... 404
Potential Kilowatts and Business—by John M. Morris ... 475
Powdered Coal and Oil Fuels, Saw Mill Refuse—by Darrah Corbet ... 10
Power Companies, Balance Sheet of Western ... 235
†Power Companies, Financial Status of ... 207
†Power Companies' Securities, Western ... 207
†Power Company and the Public, The ... 554
†Power Company, Engineering Advice in ... 4
*Power Company Financially, Back Up Your Local ... 236
†Power Company, The Motion Picture for the ... 56
Power Company Views Used in Photoplays ... 509
*Power Development on the San Joaquin, Reminiscences of—by A. G. Wishon ... 267
Power Factor Correction on Distribution Systems ... 116
*Power Industry of the West, The Airplane a Coming Factor in the—Frontispiece ... 202
†Power Lines, The Tree Planting Movement and ... 457
*Power on the Farm ... 462
Power Plant Practice in the West, Features of Steam ... 222
*Power Plant Tests, Steam—by H. L. Doolittle ... 81, *130, *182
Power Production and Consumption, Jan.-June, 1920, Electric ... 346
Power Production in Soviet Russia ... 580
Power Rates Cut by State Board ... 93
Power Required, Farm ... 478
†Power Restrictions and the Rains ... 405
Power Restrictions for California, New ... 243
Power Restrictions Lifted in California ... 144
*Power Shortage, Forestalling Another ... 212
*Power Shortage in the West, Meeting the ... 280
†Power Sites in National Parks, Water ... 355
†Power Situation, A More Optimistic Outlook on the ... 5
Power Situation in California—1920, The—by H. G. Butler ... 558
*Power to the West, More—by Robert Sibley ... 328
Practical Application of General Lighting Safety Orders—by R. L. Eltringham ... 65
*Precipitation, California—by Andrew H. Palmer ... 25
†Pressures in Steam Electric Generation, Higher ... 557
†Prices, Trend of ... 5
†Pride, Why Not More Local? ... 355
Prime Movers ... 315
†Principals, A Call for the ... 303
†Private versus Public Ownership, The Eternal Question of ... 253
*Problem Course in Electricity—by H. H. Bliss ... 78, 119, 183, 224, 277, 336, 380, 429, 482, 529, 574
Problems in Ornamental Street Lighting ... 232
*Production Through Good Lighting, Increasing ... 417
Profit Making Appliance Business, Principles of a—by T. W. Simpson ... 29
†Progress in Insulator Development ... 3
Prospect Plant of California-Oregon Company ... 344
†Public Ownership, The Eternal Question of Private versus ... 253
†Public Scepticism Toward Cooperation ... 554
†Public, The Power Company and the ... 554
*Public Utilities, Financing ... 208
Public Utilities in California ... 541
Public Utilities in the West, Financing—by A. N. Kemp ... 473
Public Utilities and the Railroad Commission ... 514
†Public Utility Complaints, Analysis of ... 554
Public Utility Industry, Competition in the—by George L. Myers ... 310
*Public Utility Service, A New Aspect of ... 228
†Publicity and the Development of the West ... 254
*Publicity Campaign, N. E. L. A. Starts ... 393
†Publicity for Engineers ... 105
†Publishers' Announcement ... 103
*Pumping Installation, A New ... 259
†Pumping Survey in Montana, Electric ... 255
†Putting in of the Kerckhoff Power House, The ... 207

Page

Q

†Question of Outside Securities, The ... 506
†Questionnaire, The Service of the ... 407

R

Radio, Industrial Uses of ... 279
*Railroad, Automatic Substation, Sacramento Northern—by W. H. Evans ... 132
Railroad Commission, Public Utilities and the ... 514
Railroad Electrification ... 116
Railroad, Electrification of the Stockholm Goteborg ... 66
Railway, Electric Power Consumption on the C. M. & St. P.—by Reinier Beeuwkes ... 117
Railway Electrification, South American ... 21
†Railway Electrification, Standardization in ... 5
*Raisin Packing Plant, Electric Operation for Fresno ... 469
†Range Distribution Systems ... 406
†Rate Fixing; Changing Values ... 106
†Rates and the High Cost of Living, Electric Light ... 456
†Rates, "Fixed Charges" in Water Power ... 555
†Rates, The Increase in Freight ... 155
*Recent Development in Machines for Electric Arc Welding ... 561
*Reclaiming the Desert ... 590
Reclamation Association, Convention of Western States ... 291
*Recreational Work in Construction Camps—by Richard E. Smith ... 228
Refractories in the Electric Furnace—by Carl H. Booth ... 513
*Refrigeration, Electrical—by J. M. Buswell ... 257
†Regulating Commission, Selling the ... 356
†Regulation, Constructive Commission ... 5
Regulation, Trend of—by Carl D. Jackson ... 36
*Reinforced Concrete Arch Dam, The—by F. A. Noetzli ... 79
*Reminiscences of Power Development on the San Joaquin—by A. G. Wishon, 267, 322
Report of Accounting Section to N. W. Convention ... 317
Report of Commercial Section to N. W. Convention ... 318
†Report of Electric Railway Commission ... 305
†Research and Industry ... 104
Research Equipment, High Voltage—by Harris J. Ryan ... 560
†Research Work Needed on Transformer Oils ... 255
†Restrictions and the Rains, Power ... 405
Restrictions on Non-Essential Lighting in California ... 293
†Return of the Electric Vehicle, The ... 55
†Rewards, Distribution of ... 155
†*Rice Irrigation ... 455
*Rice Irrigation, An Emergency Steam Plant for—by Rudolph Van Norden, 465, 525
Rise of Civil Aviation, The—by Lieut. H. A. Halverson ... 370
†Rise of Electric Welding ... 505
*Rocky Mountain Cooperative League Is Organized ... 543
Rocky Mountain Division, N. E. L. A. ... 240, 342, 391
Russia, Power Production in Soviet ... 580

S

*Sacramento Electrical Home—Frontispiece ... 152
*Sacramento Northern Railroad, Automatic Substation—by W. H. Evans ... 132
*Sacramento River Pumping Plant ... 259
Safety ... 24
†Safety Factor in Boilers ... 305
*Safety First Lesson, The ... 539
Safety Matters, California Joint Committee on ... 392
Safety Orders, Practical Application of General Lighting—by R. L. Eltringham ... 65
Safety Rules ... 317
Sale Into Two, Making One—by M. T. Dolman ... 279
*Sales Campaign on Electric Washing Machines, A—by H. L. Cook ... 515
*Sales, Registering ... 511
Salt Lake City Association of Contractor-Dealers ... *142
Salt Lake City Commercial Club ... 141
*Salt Lake City, Electrical Cooperation in—by E. H. Eardley ... 128
San Francisco Association of Electrical Contractors and Dealers ... 45, 241
San Francisco Electrical Development League ... 17, 40, 42, 89, 90, 143, 191, 341, 391, *544, 594, 595
San Francisco Electrical Retailers' Association ... 444
San Francisco, Joint Council of Engineering Societies of ... 16
San Francisco Section, A. I. E. E. ... 90, 143, 292, 544
*San Francisquito Plant Number Two Is Put into Operation ... 233

Page

†Sanity, Advertising ... 507
San Joaquin Light & Power Corporation Starts New Plant ... 294
*San Joaquin, Reminiscences of Power Development on the—by A. G. Wishon ... 267
*San Joaquin Valley, Ice Making in the—by J. M. Buswell ... 257
Saw Mill Refuse, Powdered Coal and Oil Fuels—by Darrah Corbet ... 10
*School of Engineering, A New—by Walter Haynes ... 137
Seattle Section, A. I. E. E. ... 292, 391, 444
†Securities, Customer Ownership of ... 554
†Securities, The Question of Outside ... 506
†Securities, Western Power Companies' ... 207
*Seeing Is Believing—by L. C. Kent ... 57
†Selection of Officers ... 3
Self Interest—by A. Emory Wishon ... 471
†Selling a Buyer's Market ... 505
*Selling Mazda Lamps—by Clarence Llewellyn ... 68
†Selling of 8% Bonds in California, The ... 206
†Selling the Regulating Commission ... 356
†Service of the Questionnaire, The ... 407
Sespe Power Corporation Plans Five Units in California ... 394
*Shasta Electric Works; booth ... 195
†*Ship, Electrically Driven Merchant ... 405
*Shipyards of Southwestern Shipbuilding Co.—Frontispiece ... 52
*Shredded Wheat Factory ... 263
*Sign Manufacture, Electric — by R. E. Smith ... 70
*Sign, Used During Moving ... 425
*Skagit River Development, The—by C. F. Uhden ... 567
Skagit River Project, Preliminary Work on ... 345
Skykomish River Development ... 539
†Slump or No Slump the West Is Secure ... 403
*Smelting Industry, The West Leads in the —Frontispiece ... 252
†Societies, The Federated Engineering ... 305
*Society for Electrical Development, Xmas Window ... 440
†Society of Engineering Profession, National ... 54
Solicitors, Value of Appliance ... 75
†Solution of the Contractor's Problem, A ... 54
†Something to Think About ... 153
Southern California Edison Company Announces Fifteen-Year Program ... 347
Southern California Edison Company Construction Plans ... 392
*Southern California Edison Company Project Visited by Newspaper Men ... 439
Sparks ... 37, 86, 138, 188, 237, 288, 338, 385, 435, 486, 535, 586
*Spokane Convention, The ... 211, 285
Spokane Engineers, Affiliation of ... 14
*Spott Electrical Company Store ... 582
*Spread of the Cooperative Idea, The ... 215
†Standardization in Railway Electrification ... 5
*Stanford University High Voltage Laboratory—Frontispiece ... 552
†Steam Electric Generation, Higher Pressures in ... 557
*Steam Plant for Rice Irrigation, An Emergency—by Rudolph Van Norden ... 465, 525
*Steam Plant, New Portland—by E. E. Foote ... 12
*Steam Power Plant Practice in the West, Features of ... 222
*Steam Power Plant Tests—by H. L. Doolittle ... 81, 130, 182
*Steam Power Plants of California ... 280
*Steam Turbine Characteristics—by Willis T. Batcheller ... 20, 84
†Step in the Right Direction, A ... 104
*Stock Show Building, Illumination in a—by F. D. Weber ... 83
†Storage Batteries in Driving Tunnels ... 256
*Storage Battery Charging a Central Station Opportunity—by R. W. Goddard ... 129
*Store, A New Northwestern Electrical ... 591
*Store, Art in the Electrical ... 582
*Store, Christmas Windows in the Electrical ... 411
*Store of E. Brettell, Vancouver, B. C. ... 578
*Store, Sign Used When Moving ... 425
*Store, The Desire—by H. B. Rogers ... 420
*Store, Window Display in Portland ... 585
*Stores in the Northwest, Electrical ... 217
*Storm, An Electrical ... 331
Street Lighting, Problems in Ornamental ... 232
*Stubbs Electric Company Window Display ... 585
*Substation, A Tie-in Outdoor ... 73
*Substation, Sacramento Northern Railroad, Automatic—by W. H. Evans ... 132
†Substations, Automatic ... 53
†*Successful Handling of the Teredo-Limnoria Problem ... 555
Survey by California State Water Commission ... 145
*Suspension Insulator, Electrical Characteristics of the—by F. W. Peek, Jr. ... 7
*Suspension Insulator Strings, Unit Voltage Duties in Long—by Harris J. Ryan and Henry H. Henline ... 9

Page

Suspension Insulators, Factors Controlling the Design and Selection of—by W. D. A. Peaslee ...
Swiss Market for Electric Washing Machines ... 177
Synchronous Club ... 89, 343, 444

T

Tacoma Association of Electrical Contractors and Dealers ... 495
Talking to a Nation By Wireless ... 219
Technical Council, Oregon ... 15
Technical Section's Report to Northwest Convention ... 314
Technical Training ... 107
†Technical Training, Demand for Better ... 103
†Telegraph Service ... 105
*Telegraph Service, Modern—by R. B. Calkins ... 121
Telephone in South America, The ... 428
Telephoning Photographs ... 576
†Telephony in the West, New Advances in Telluride Association Convention ... 90
*Tennis at Night—by L. E. Voyer ... 414
†*Teredo-Limnoria Problem, Successful Handling of the ... 555
*Terminal Center for San Francisco Bay—Frontispiece ... 402
*Tests, Steam Power Plant—by H. L. Doolittle ... 81, 130, 182
†Thanksgiving, Western ... 453
†Time for All Things, A ... 457
†Toys a Christmas Opportunity, Electrical ... 404
*Toys, Electrical ... 408
Trade Notes ... 46, 95, 196, 245, 395, 442, 497, 542, 592
†Training, Demand for Better Technical ... 103
*Transformer for Brass Furnaces ... 565
†Transformer Oils, Research Work Needed on ... 255
*Transmission Line, A 110,000-Volt Wood Pole—by L. J. Moore ... 517
Transmission Line Construction in 1920—by H. A. Barre ... 566
*Transmission Lines, Trunk — by C. Edward Magnusson ... 519
†Transmission Records for the West ... 406
*Transmission System, Interesting Additions to the Longest—by C. O. Poole ... 476
*Transmission Systems of Northwest—Frontispiece ... 302
Treating Poles Electrically ... 109
†Tree Planting Movement and Power Lines, The ... 457
Trend of Regulation—by Carl D. Jackson ... 36
†Triumphant Electric Drive on Battleships, The ... 306
*Trouble Shooting in Gold and Silver Mining—by B. B. Beckett ... 375
†Troubles in the Mine, Hunting ... 355
*Trunk Transmission Lines—by C. Edward Magnusson ... 519
†Tunnels, Electric Storage Batteries in Driving ... 256
*Turbine Characteristics, Steam—by Willis T. Batcheller ... 20, 84
†Two Hundred Thousand Electrically Educated ... 153

U

Underground Construction and Electrolysis ... 316
*Unit Voltage Duties in Long Suspension Insulator Strings—by Harris J. Ryan and Henry H. Henline ... 9
*Universities of the West—Frontispiece ... 102
*Use of Seasonal Advertising, The ... 272
*U. S. S. California ... 491
Utilities and the Railroad Commission, Public ... 514
*Utilities, Financing Public ... 208
†Utility Campaign, A Joint ... 504
†Utility Commissioners, Appointment of ... 403
Utah Society of Engineers ... 390
†Utility Complaints, Analysis of Public ... 554
†Utility Financing Should Be Supported, Electric ... 203
Utility Securities Authorized in California, 1919-1920 ... 491

V

*Vacuum Cleaner, The ... 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600
†Vast Growth in Agricultural Uses of Electricity ... 456
†Vehicle, The Return of the Electric ... 55
*Voltage Duties in Long Suspension Insulator Strings, Unit—by Harris J. Ryan and Henry H. Henline ... 9

W

Washers, Mothers, Kids and Electric Clothes—by Gerald F. Champ ... 187
*Washing Machine Display ... 275
*Washing Machines, A Sales Campaign on Electric—by H. L. Cook ... 515

Page

Washing Machines, Swiss Market for ... 177
Washington Association of Electrical Contractors and Dealers ... 495
†Washington, Electric Construction in ... 455
*Water Mains, Arc Welding Outfit for Tapping ... 528
Water Power Applications to California State Water Commission ... 490
*Water Power, Developing Idaho by ... 22
†*Water Power Development, Newspaper Support in ... 506
†Water Power Development, The Airplane in ... 353
Water Power, Fuel Conservation and ... 233
†Water Power Law at Last, A ... 3
Water Power League, Convention of ... 346
Water Power Legislation ... 91
Water Power Permits, Applications Filed for ... 294
†Water Power Rates, "Fixed Charges" in ... 555
*Water Power Shortage ... 43
†Water Power Sites in National Parks ... 355
Water Wheels for Pit River Station, Record ... 344
*Welding, Electric Arc—by F. A. Anderson ... 510
*Welding, General Notes on—by R. E. Frickey ... 512
Welding of Copper, Electric ... 146
*Welding Practice, Electric—by J. H. Anderton ... 508
*Welding, Recent Developments in Machines for Electric Arc ... 561
†Welding, Rise of Electric ... 505
†Welding, Western Leadership in Electric ... 355
†West, A Wireless Record for the ... 356
*West, Commercial Possibilities of Aircraft in the—by Major H. H. Arnold ... 364
West, Financing Public Utilities in the—by A. N. Kemp ... 473
†West, Giant Industries Enter the ... 206
West in 1920, Growth of Central Stations in the ... 394
†West Is Secure, Slump or No Slump the ... 403
†West, Keeping Engineering Leadership in the ... 353
*West Leads in the Smelting Industry, The—Frontispiece ... 252
*West, Meeting the Power Shortage in the ... 280
*West, More Power to the — by Robert Sibley ... 328
†West, Optimism Over New Industries for the ... 254
West, Publicity and the Development of the ... 254
†West, The Electric ... 56
†West, The Increase in Population in the ... 354
*Western Development, More Power for ... 270
*Western Engineer, The ... 14
*Western Hydroelectric Records, and New Construction, Early ... 562
*Western Ideas ... 35, 85, 184, 335, 425
†Western Leadership in Electric Welding ... 355
Western Power Companies, Balance Sheet of ... 235
†Western Power Companies, Financial status of ... 207
†Western Power Companies' Securities ... 207
†Western Thanksgiving ... 453
†*Westward the Course of Empire ... 556
†What If Mineral Fuels Gave Out? ... 354
What Is the Business Outlook? ... 220
*When the Dollar Starts Rolling in, Putting Kilowatts Upon the Line—Frontispiece ... 452
†Why Not More Local Pride? ... 355
*Window By Night, The Dealer's ... 69
*Window Display in Portland Store ... 585
*Window, Society for Electrical Development Christmas ... 440
*Windows, Christmas ... 411
Wire Manufacture in Japan, Electric ... 225
*Wired, How the Electrical Home Is ... 163
Wireless Apparatus for the Electrical Dealer—by Louis Etshokin ... 423
Wireless Illumination for Guiding Mail Planes ... 347
†Wireless Record for the West, A ... 356
Wireless, Talking to a Nation by ... 219
Wireless, Wired ... 337
Wiring Code for Seattle Revised ... 347
Wiring Methods, Standardization of ... 76
†Wiring Specifications, Cooperation on ... 305
*Wiring the Electrical Home, In ... 168
*Woman's Convenience, A—By a Woman ... 166
*Women for the Electrical Home, Educating—by Millicent L. Sears ... 170
*Wood Pole Transmission Line, A 110,000-Volt—by L. J. Moore ... 517
†*Wood Pulp Possibilities in Southeastern Alaska ... 454
Work of the Electrical Jobbers in 1920—by C. C. Hillis ... 579
†World Records Soon to Be Broken ... 406

Y

Yacht, An Oil Electric Propelled ... 266
*Yard Lighting, Industrial — by A. G. Humphrey and R. G. Taplin ... 61
*Year's Work for Cooperation, A—by Lee H. Newbert ... 577

Reproduced from poor material